

REMARKS/ARGUMENTS

Applicant thanks Examiner for the detailed Office Action dated March 31, 2006. In response to the issues raised, the Applicant offers the following submissions and amendments. We also enclose a Terminal Disclaimer linking the term and ownership of any patent granted on the present application to that of USSN 10/773,195.

Amendments

Page 1 of the specification has been updated. The first paragraph (first line) has been deleted and replaced by a paragraph entitled "Cross-Reference to Related Application".

Claims 1, 19 and 38 have been amended to highlight the features distinguishing the present invention from the prior art.

The Abstract has been amended to replace any 'claim-like' language.

Accordingly, the amendments do not add any new matter.

Abstract

As discussed above, we believe that the amended Abstract provides a clear and concise description of the disclosure in compliance with 37 CFR 1.72.

Non-Statutory Double Patenting

We trust the enclosed Terminal Disclaimer addresses this issue.

35 U.S.C. §102 - Claims 1, 6, 19 and 25

Claims 1, 6, 19 and 25 stand rejected for lack of novelty in light of US 4,797,692 to Ims.

As discussed above, independent claims 1 and 19 have been amended to clarify the distinction between the invention and the cited reference. The heater element of the present invention is laterally bounded within its plane of deposition by the walls of the chamber. By enclosing the heater element on all sides, the pressure pulse generated by the bubble is focused toward the nozzle opening formed in a parallel plane.

The Ims printhead is referred to in the field as a 'side-shooter' as the droplet trajectory of parallel to the planes of deposition. The bubble 26 generated by the heater element 18 creates a pressure pulse that travels in both directions along the triangular grooves 22. The pulse traveling towards the nozzle 14 expels ink. The other pressure pulse dissipates with fluidic drag against the side of the grooves.

Ims does not disclose a planar heater element laterally bound by the chamber sidewalls in order to better direct the pressure pulse toward the nozzle formed in the opposing nozzle plate. Accordingly, claims 1 and 19, and therefore their dependent claims 6 and 25, are novel in light of the Ims disclosure.

35 U.S.C. §103 - Claims 2 – 5, 7 – 18, 20 – 24 and 26 – 37 and 38 - 54

Claims 2 – 5, 7 – 18, 20 – 24 and 26 – 37 stand rejected as obvious in light of Ims in combination with US 4,794,410 to Taub et al, US 5,706,041 to Kubby, US 5,856,836 to Silverbrook, US 6,543,879 to Feinn et al, US 6,447,104 to Keil et al, US 5,841,452 to Silverbrook et al, US 4,797,692 to Kashino et al, US 4,965,584 to Komuro, US 5,710,070 to Chan, or US 4,931,813 to Pan et al. Similarly, claim 38 stands rejected as obvious in light of Ims in view of US 4,549,191 to Fukuchi et al. Dependent claims stand rejected as obvious in light of Ims in view of Fukuchi in further view of the references listed above.

As discussed above, Ims fails to anticipate all the elements of amended claims 1 and 19. Likewise Ims and Fukuchi fail to disclose all the elements of independent claim 38. Furthermore, none of the cited references teach or suggest laterally enclosing the heater element so that the pressure pulse from the bubble does not dissipate sideways instead of through the nozzle with the ejected ink.

It follows that the citations fail to support a §103 rejection of the above claims.

It is respectfully submitted that the Examiner's objections and rejections have been successfully traversed and the application is now in condition for allowance. Accordingly, favorable reconsideration is courteously solicited.

Very respectfully,

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